Flammability Groups

In the following list E denotes an exotic plant, TN a plant native to Tasmania, AN a plant native to mainland Australia and X a known environmental weed.

High Flammability

These plants have been shown to be highly flammable and should not be planted or allowed to remain inside your house's Building Protection Zone. They should also be avoided in the Fuel Modified Zone. Move these plants away from your house and replace them with less flammable plants.

Acacia dealbata TN Silver Wattle
Acacia stricta TN Hop Wattle
Acacia verticillata TN Prickly Moses
Acer palmatum E Japanese Maple
Acmena smithii AN Lilly Pilly
Aesculus hippocastanum E Common Horse Chestnut
Allocasuarina cunninghamiana AN River Sheoak
Angophora floribuna E Rough-barked Apple
Bambusa vulgaris E Bamboo
Banksia integrifolia AN Coast Banksia
Banksia marginata TN Honeysuckle
Betula pendula E Silver Birch
Buddleia dandii E Butterfly Bush
Callistemon citrinus AN Common Red Bottlebrush
Callitris rhomboidea TN Oyster Bay Pine
Cassia javanica E Pink Cassia
Chamaecyparis lawsoniana E Lawson Cypress
Cinnamomum camphora E Camphor Laurel
Citrus limon E Lemon
Cortaderia argentea E X Pampas Grass
Cupressus funebris E Mourning Cypress
Dodonaea viscosa TN Native Hop
Elaeocarpus reticulatus TN Blueberry Ash
Eucalyptus amygdalina TN Black Peppermint
Eucalyptus globulus TN Blue Gum
Eucalyptus maculata AN Spotted Gum
Eucalyptus obliqua TN Brown Stringybark

High flammability native — Teatree

Eucalyptus paniculata AN Grey Ironbark
Eucalyptus pulchella TN White Peppermint
Eucalyptus viminalis TN White Gum
Exocarpos cupressiformis TN Native Cherry
Flindersia australis AN Crow's Ash
Gahnia grandis TN Cutting Grass
Gleditsia tricanthos E Honey Locust
Grevillea x Poorinda AN Poorinda Cultivars of Grevilleas
Grevillea robusta AN Silky Oak
Grevillea rosmarinifolia AN Rosemary Grevillea
Ilex aquifolium E X Holly
Lepidosperma laterale AN Sword Rush
Leptospermum lanigerum TN Woolley Teatree
Leptospermum scoparium TN Manuka, Teatree
Lomandra longifolia TN Saggs
Melaleuca alternifolia AN Paperbark
Monstera deliciosa E Monstera
Nadina domestica E Sacred Bamboo
Nicotiana glauca AN Tobacco Bush
Pinus elliottii E Slash or Elliott's Pine
Pinus patula E Mexican or Weeping Pine
Pittosporum undulatum AN X Sweet Pittosporum
Platanus x acerifolia E Plane Tree
Poa sp. AN Poa Grass
Populas sp. E Poplar
Quercus robur E English oak
Spiraea catoniensis E May
Tasmannia lanceolata TN Native Pepper
Ulex europaeus E X Gorse
Viburnum opulus E Guelder Rose

Moderate Flammability

These plants should be avoided in the Building Protection Zone. They should not be allowed dominate your garden and should be well maintained, being especially careful to remove dead material before it accumulates.

Acacia baileyana AN X Cootamundra Wattle
Acacia decurrens AN Green Wattle
Acacia mearnsii TN Black Wattle
Acacia melanoxylon TN Blackwood
Acacia podalyrifolia AN Mt Morgan Wattle
Actinidia chinensis E Kiwi Fruit
Araucaria heterophylla AN Norfolk Island Pine
Atherosperma moschatum TN Sassafras
Bedfordia salincina TN Blanket Bush
Beyeria viscosa TN Pinkwood
Brachychiton acerifolius AN Illawarra Flame Tree

High flammability exotic — Japanese Maple

Low flammability exotic — Geranium

Brachychiton discolour AN Lacebark
Brachychiton rupestris AN Bottle Tree
Calodendrum capense E Cape Chestnut
Canna indica E Canna Lily
Cassia floribunda E Smooth Cassia
Ceanothus papillosus E Pacific Blue
Chaenomeles japonica E Flowering Quince
Chrysanthemum indicum E Chrysanthemum
Citrus nobilis E Mandarin
Coleonema pulchrum E Diosma
Cotoneaster glaucophyllus E X Cotoneaster
Cucurbita maxima E Pumpkin
Cymbopogon citratus E Lemon Grass
Cyphomandra betacea E Tamarillo
Delonix regia E Poinciana
Dicksonia antarctica TN Man Fern
Diospryros sp. E Persimmon
Eriobotrya japonica E Loquat
Escallonia macrantha E Escallonia
Euryops pectinatus E Yellow Daisy Bush
Genista monspessulana E X Montpellier Broom
Koelreuteria paniculata E Golden Rain Tree
Lantana camara E Lantana
Ligustrum lucidum E Large-leaved Privet
Liquidambar styraciflua E Liquidamabar
Magnolia grandiflora E Magnolia
Morus sp. E Mulberry
Myoporum insulare AN Boobyalla
Nerium oleander E Oleander
Olearia argophylla TN Musk
Photinia glabra var. rubens E Chinese Fire Bush or Red-leafed Photinia
Pittosporum bicolor TN Cheesewood
Pteridium esculentum TN Bracken Fern
Rhododendron sp. E Rhododendron
Rosa sp. E X Roses, Briars
Salix babylonica E Weeping Willow
Salix chilensis E Pencil Willow
Sorbus aucuparis E Rowan
Spathodea campanulata E African Tulip Tree
Syringa vulgaris E Lilac
Weigela florida E Fairy Trumpets
Zieria arborescens TN Stinkwood

Low Flammability

These plants are acceptable in the Building Protection Zone and will be valuable replacements for more flammable plants.

Artemisia sp. E Wormwood or Angels Hair
Camellia sp. E Camellias
Capsicum annum var. fasciculatum E Chilli
Datura suaveolens E Angels Trumpet
Diplarrena moraea TN White Flag Iris
Gazania hybrida E Treasure Flower
Hebe speciosa E Veronica
Hemerocallis aurantiaca E Day Lilly
Hydrangea macrophylla E Hydrangea
Hymenocallis littoralis E Spider Lily or Spider Flower
Hymenosporum flavum AN Native Frangipanni
Lampranthus aurantiacus E Pigface or Iceplant
Lavendula angustifolia E English Lavender
Passiflora herbertiana AN Native Passionfruit
Pelargonium peltatum E Geranium

Low flammability native — Dogwood

Pomaderris apetala TN Dogwood
Prunus sp. E Plum
Solanum melongera E Eggplant

Prepared by Mark Chladil and Jennifer Sheridan on behalf of the **Tasmanian Fire Research Fund** and the **Royal Tasmanian Botanical Gardens** 1997, Rev. 2003.

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Fire Retardant Garden Plants for the Urban Fringe and Rural Areas

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Introduction

All vegetation will burn in a bushfire and pose a hazard to people and their homes. However, not all vegetation has the same flammability and there is great potential for people living in bushfire prone areas to **reduce their fire hazard** by changing the plants in their gardens.

Why Plant Flammability is Important

During a bushfire, the type, amount and arrangement of vegetation is critically important for the survival of your house. The fuel for bushfires is the main danger factor that people can control. Hazard reduction activities such as clearing and fuel reduction burning, aim to lower the vegetation hazard to a safe level. Because some plants have a higher resistance to burning than others, we can use low flammability plants for added protection in addition to normal maintenance and hazard reduction activities.

There are two basic factors to be considered in determining a plant's flammability: the first is how readily its parts burn and the second is how the form of the whole of the growing plant influences the burning of the whole plant. "Flammability" then is, or should be, the outcome of these two factors. There are many lists of plants in books but unfortunately most should be treated with suspicion because they haven't been tested in an acceptable way. The trouble with a lot of the books is they don't tell us which aspects of flammability are included and how they are combined.

Testing the flammability of individual pieces of plant is usually done by taking a section of leaf and subjecting it to a flame and measuring how quickly it burns. If you are wondering about the flammability of a few different plants, you can get a good idea using an LPG torch on pruned branches. Plants will of course burn differently once they are dead and dry and so it is usual to test both green and dead samples. Plants with broad fleshy leaves are better than those with fine hard leaves (sclerophyll). Those with significant amounts of volatile oils, like the eucalypt family which includes eucalypts and tea-trees, should be avoided.

The influence of plant shape is a lot more subjective: low growing plants and ground covers are better than shrubs; plants with dense foliage are better than those with open airy crowns; plants which don't retain dead material are better than those which hold up lots of fuel; plants with smooth bark are better than those with ribbon and rough bark.

The Role of Replacement Planting

Fire retardant plants can absorb more of the heat of the approaching bushfire without burning than more flammable plants. They can trap burning embers and sparks and reduce wind speeds near your house if correctly positioned and maintained. Fire resistant ground covers can be used to slow the travel of a fire through the litter layer and fire resistant shrubs can be used to separate the litter layer from the trees above.

If the low flammability plants sound like ornamentals and vegetables and the highly flammable ones sound like dry bush and scrub: then you've got the idea. Obviously, on dry sites it will be very difficult to grow wet forest plants so consider planting useful non-natives such as vegetables and fruit trees (most of which have very low flammabilities) or some of the less flammable ornamentals as part of your fire proofing strategy. Planting these species close to the structure and planting the natives further away also reduces the risk of these exotics escaping into the bush. Tasmania Fire Service recommends that around every house in bushfire prone areas there should be a zone where vegetation and other fuels are minimal (the **Building Protection Zone**) and that this zone

should be surrounded by a further zone where fuels are maintained at a low level (the **Fuel Modified Zone**). The widths of these zones vary with slope from 10 to 50 metres, and descriptions, widths and other information can be found in the Tasmania Fire Service publication "*Planning Conditions and Guidelines for Subdivisions in Bushfire Prone Areas*" (1995). When choosing fire retardant plants, other attributes should be taken into consideration such as their aesthetic appeal, growth rate, resistance to drought and frost, and possibly their ability to regenerate following fire.

If fire retardant plants are to be grown, a firm commitment must be made to regularly maintain them or they may become a fire hazard. This includes sufficient watering, so a high leaf moisture content is maintained, the removal of dead material and regular pruning of lower branches. Water availability is likely to be a problem in the drier months when the threat of fire is greatest. When choosing fire retardant species their water requirements need to be considered. There is no point growing plants as a protective measure against fire if they are going to die when they are most needed. Indeed, all dead plant material will be a fire hazard.

It is also necessary to realise that establishing a fire retardant garden will take time, money and lots of hard work. Many plants do not reach maturity for up to 15 years and therefore will not provide effective fire protection for some time. In comparison, other plants have shorter life spans and may continually need to be replaced.

Environmental Weeds

All gardeners should be aware that some plants are not wanted in the bush even if they are valued in the garden. Unfortunately there are many ornamental plants which can really take off when they get into the bush. Some do so well they choke out the natives, like blackberries, or become a fire hazard, like gorse.

Many environmental weeds were brought to Tasmania as ornamental or food plants and have found conditions to their liking. Most are not particularly affected by pests and diseases and so have a head start over the local plants. Predicting whether a plant will become an environmental weed is not easy so it's good practice to use native plants in gardens close to bushland. **Known environmental weeds in Tasmania that have moderate or higher flammability should be doubly avoided and are shown on the plant flammability list**.

For further information consult your local DPIWE or Council weed management officers. A useful pamphlet is "*Garden Plants are Going Bush… and Becoming Environmental Weeds*" published by the Society for Growing Australian Native Plants.

Protecting Your Home

Replacement planting with low flammability plants is not sufficient protection on its own. People living on the urban fringe and in rural areas need to be aware of the risk of bushfire and prepare themselves and their homes for when the fire comes. The Tasmania Fire Service publication "*Will you survive?*" provides good advice for householders on the urban fringe and rural areas who want to prepare themselves and their homes for bushfires. This publication and other advice is available from any Tasmania Fire Service office.